

### **Remarks**

Claims 12, 13 and 15-20 are pending. Claims 1-11 were previously cancelled, and claims 14 and 21-32 have been withdrawn.

### **Specification**

The TITLE has been amended according to the suggestion of the Examiner to more accurately reflect the nature of the invention.

### **Claim Objections**

The Examiner objected to Claim 15 because Formula (II) showed the R<sub>5</sub> and R<sub>6</sub> groups branching from the compound between the nitrogen and –CH<sub>2</sub>– groups. Claims 19 and 20 were objected to because the viscosity units were not clearly stated in the claims, which recite “mPas” as the units.

These claim objections have been addressed by appropriate amendments as suggested by the Examiner. Claim 15 Formula (II) has been corrected to show substituents R<sub>5</sub> and R<sub>6</sub> branching from the nitrogen atom. Claims 19 and 20 have been amended to replace the abbreviation “mPas” with the full description “millipascal-seconds”. No new matter was introduced in the claim amendments.

### **Claim Rejections under 35 USC § 112**

Claims 12-20 were rejected under 35 U.S.C. 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 recited the limitation “the quantities” in line 4 of the claim, lacking sufficient antecedent basis for this limitation. The remaining claims were rejected since they depend from claim 12.

Claim 12 has been amended to specifically recite the optional electrolyte salts and water as elements of the preparation, wherein the quantities of the recited surfactants, alkali metal sulfates, electrolyte salts and water add up to 100% by weight. No new matter was introduced in the claim amendment.

#### Claim Rejections under 35 USC § 102

Claims 12, 13, and 15-20 were rejected under 35 U.S.C. 102(b) as anticipated by Bednall et al ("Bednall", WO 95/14076). The Examiner states that Bednall teaches in Example 1 (page 18) the preparation of the alkyl amidobetaine cocoamido propyl betaine (CAPB). The Examiner states that CAPB meets the structural limitations of Formula (II). In addition the Examiner states that Example 1 of Bednall meets the limitations of Claim 12 with regard to percentages of surfactant and sodium sulfate, and contains water as well as the electrolyte sodium chloride. The Examiner also claims that the viscosity range limitations recited in claims 19 and 20 are inherently anticipated.

#### The Anticipation Rejection Should Be Withdrawn

Bednall requires 5-45% (claims 1 and 2) of a water-miscible, non-surfactant organic solvent as a phase modifier in order to obtain mobile or pumpable amphoteric surfactant concentrates (Bednall, p. 1) with the appropriate viscosities. Non-colloidal electrolyte salts, eg. sodium chloride, sodium sulfate, sodium acetate and sodium citrate are only discussed in the specification as optional ingredients (p. 16). Indeed there is nothing to indicate the preference for one optional electrolyte salt over another. In Example 1 (p. 18), referenced by the Examiner, the sodium sulfate in the final product arises from pH adjustment using sulfuric acid; all the other examples which specifically describe pH modification utilize hydrochloric acid (Examples 2, 5-8), and therefore do not result in a sulfate-containing product. Thus Bednall has not recognized that, according to the present invention, the viscosity of such amphoteric surfactant concentrates can be modified specifically with alkali metal sulfates alone, that is, without a water-miscible organic solvent.

In contrast Claim 12, as currently amended for clarity, is drawn to a concentrated preparation of surfactants, alkali metal sulfates, optional electrolyte salts and water, which components must comprise 100% by weight of the composition, thereby excluding organic solvents. Applicants recognized the surprising discovery that “even the presence of very small quantities of alkali metal sulfates, more especially sodium sulfate, is sufficient clearly to reduce the paste viscosity of highly concentrated water-based preparations of amphoteric or zwitterionic surfactants both by addition during production and by subsequent addition to the pastes. More particularly, even the unwanted effect of gradual gellation is reliably prevented” (specification, p. 2, line 30 spanning p. 3, line 6). This is accomplished in a purely water-based formulation, with typical water contents of about 35% to about 60% by weight (specification, p.5, lines 26-27). In contrast, the composition of Example 1 of Bednall contains only 22.8% water, because it also contains 30.7% propylene glycol as the water-miscible organic solvent. Thus, the compositions of Bednall have less water than the preparations of the present invention because Bednall’s compositions contain the additional required organic solvent.

In summary, Bednall requires the use of a water-miscible non-surfactant organic solvent in his concentrated surfactant compositions to achieve the desired physical characteristics (appropriate viscosity range). In contrast, Applicants require the use of a sulfate salt in an exclusively aqueous preparation. Sulfate salts are not equivalent to water-miscible organic solvents. Therefore, in light of these remarks, the rejection should be withdrawn.

#### Claim Rejections under 35 USC § 103

Claims 12-20 were rejected under 35 U.S.C. 103(a) as unpatentable over Bednall, which describes a surface-active composition as described above. The

Examiner states that claim 19 recites the composition as having a measured viscosity of less than 5000 millipascal-seconds and claim 20 recites the composition as having a measured viscosity ranging from 1000 to 2500 millipascal-seconds. The Examiner also state that Bednall teaches a composition typically having a viscosity of "most preferably 700 to 6000 centipoise at ambient temperature". The Examiner also states that one centipoise is equal to one millipascal second. The Examiner states that Bednall does not teach the particular viscosity ranges claimed by Applicants, but that viscosity is a result effective parameter that a person of ordinary skill in the art would routinely optimize by adjusting the components of the claimed surfactant formulation (e.g. water).

#### The Obviousness Rejection Should Be Withdrawn

Since Bednall requires the presence of a water-miscible non-surfactant organic solvent to obtain the desired physical properties of the concentrated surfactant composition, it would not be reasonable to expect one of ordinary skill in the art to reduce that concentration to 0%, in other words eliminate the organic solvent completely, as Applicants have demonstrated in the present invention.

In addition, the solvent-free concentrates of the present invention are preferable for a variety of reasons. Applicants' water-only concentrates are more "green", that is environmentally friendly by virtue of the elimination of a petroleum-based organic solvent. In addition, a low VOC (Volatile Organic Compound) concentrate, having a higher flashpoint, is preferable for safety and handling reasons. Also Applicants' water-only concentrates provide the customer with greater flexibility in formulating products, without the interference of an accompanying organic solvent.

For some time - - even prior to Bednall's 1995 publication date - - environmental scientists and governmental authorities have recognized the adverse environmental impact of VOCs (see Exhibit A, attached, the 1994 European Parliament and Council Directive 94/63/EC of 20 December 1994). Notwithstanding this state of affairs, the industry had yet to develop concentrated surfactant compositions that were solvent-free,

until Applicants discovered that such compositions could be made, using an alkali metal sulfate as a viscosity reducer. If this invention were so obvious given the long need for such a composition, it surely would have been developed before Applicants' 2004 filing date, given this situation. However, the fact that we had to wait for Applicants' invention so long speaks volumes about its non-obviousness.

The 1994 Directive mentions a 1979 Convention on VOCs and a 1991 Directive on VOCs. Both the 1979 Convention and the 1991 Directive predate Bednall's filing date. Thus, the failure of Bednall, to appreciate what Applicants later invented even facing these pressures illustrates the non-obviousness of this invention.

In light of these remarks, the rejections should be withdrawn and the claims allowed.

Respectfully submitted,

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